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1 Interface definition language conversions: recursive types   ◼

David E. Gay

August 1994 **ACM SIGPLAN Notices , Proceedings of the workshop on Interface definition languages**, Volume 29 Issue 8

Full text available: 🗎 pdf(524.84 KB)   Additional Information: full citation, abstract, citings, index terms

A large heterogeneous network contains many applications developed in different environments, each with its own incompatible interface definition language. One way of dealing with this diversity is to define a conversion from the interfaces of one system into another, thus giving access from the second system to the first. This presents a number of difficulties, amongst which is the different representation of recursive types in different languages. This paper gives two algorithms for converting ...

2 Specification and testing of the behavior of network management agents using SDL-92 ◼

Olaf Henniger, Michel Barbeau, Behçet Sarikaya

December 1996 **IEEE/ACM Transactions on Networking (TON)**, Volume 4 Issue 6

Full text available: 🗎 pdf(1.65 MB)   Additional Information: full citation, references, citings, index terms

3 Compact and efficient presentation conversion code   ☐

Philipp Hoschka

August 1998 **IEEE/ACM Transactions on Networking (TON)**, Volume 6 Issue 4

Full text available: 🗎 pdf(114.76 KB)   Additional Information: full citation, references, citings, index terms

Keywords: Markov processes, data communication, data conversion, optimization methods, optimizing compilers

4 Scalability and performance of an agent-based network management middleware   ☐

Alan Bivens, Rashim Gupta, Ingo McLean, Boleslaw Szymanski, Jerome White

March 2004 **International Journal of Network Management**, Volume 14 Issue 2

Full text available: 🗎 pdf(269.74 KB)   Additional Information: full citation, abstract, references, index terms

Rapid growth of computer network sizes and uses necessitate analysis of network application middleware in terms of its scalability as well as performance. In this paper we analyze a distributed network management middleware based on agents that can be dispatched to locations where they can execute close to the managed nodes. The described middleware operates between the network protocol layer and the application layer and uses standard TCP protocol and SNMP probes to interface the network. By ag ...

5 Development of SNMP-XML translator and gateway for XML-based integrated network management

Jeong-Hyuk Yoon, Hong-Taek Ju, James W. Hong
July 2003 **International Journal of Network Management**, Volume 13 Issue 4

Full text available: pdf(251.82 KB)   Additional Information: full citation, abstract, references, index terms

The research objective of our work is to develop a SNMP MIB to XML translation algorithm and to implement an SNMP-XML gateway using this algorithm. The gateway is used to transfer management information between an XML-based manager and SNMP-based agents. SNMP is widely used for Internet management, but SNMP is insufficient to manage continuously expanding networks because of constraints in scalability and efficiency. XML based network management architectures are newly proposed as alternatives t ...

6 A reuse and composition protocol for services

Dorothea Beringer, Laurence Melloul, Gio Wiederhold
May 1999 **Proceedings of the 1999 symposium on Software reusability**

Full text available: pdf(1.71 MB)   Additional Information: full citation, references, index terms

Keywords: Internet-based reuse, application generators, interface issues, reuse environments, reuse process

7 Management of virtual private networks for integrated broadband communication

J. M. Schneider, T. Preuß, P. S. Nielsen
October 1993 **ACM SIGCOMM Computer Communication Review , Conference proceedings on Communications architectures, protocols and applications**, Volume 23 Issue 4

Full text available: pdf(1.29 MB)   Additional Information: full citation, references, citings, index terms

8 Workshop and conference summaries: Exchange format bibliography

Holger M. Kienle
January 2001 **ACM SIGSOFT Software Engineering Notes**, Volume 26 Issue 1

Full text available: pdf(616.88 KB)   Additional Information: full citation, abstract, references

This paper gives a brief bibliographical overview of exchange formats and related research areas. We classify exchange formats and try to give a brief assessment of the more interesting ones.

Keywords: Exchange format, bibliography, graph format, overview

9 A pattern system for network management interfaces

Rudolf K. Keller, Jean Tessier, Gregor von Bochmann
September 1998 **Communications of the ACM**, Volume 41 Issue 9

Full text available: pdf(183.68 KB)   Additional Information: full citation, references, citings, index terms, review

10 Performance analysis of communication systems formally specified in SDL

Martin Steppler
October 1998 **Proceedings of the first international workshop on Software and performance**

Full text available: pdf(2.27 MB)   Additional Information: full citation, references, index terms

11 <u>Getting Erlang to talk to the outside world</u>

Joe Armstrong
October 2002 **Proceedings of the 2002 ACM SIGPLAN workshop on Erlang**

Full text available: pdf(125.52 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

How should Erlang talk to the outside world? --- this question becomes interesting if we want to build distributed applications where Erlang is one of a number of communicating components.We assume these components interact by exchanging messages --- at this level of abstraction, details of programming language, operating system and host architecture are irrelevant. What is important is the ease with which we can construct such systems, and the precision with which we can isolate faulty componen ...

12 <u>A mediation infrastructure for digital library services</u>

Sergey Melnik, Hector Garcia-Molina, Andreas Paepcke
June 2000 **Proceedings of the fifth ACM conference on Digital libraries**

Full text available: pdf(155.30 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

Digital library mediators allow interoperation between diverse information services. In this paper we describe a flexible and dynamic mediator infrastructure that allows mediators to be composed from a set of modules (``blades"). Each module implements a particular mediation function, such as protocol translation, query translation, or result merging. All the information used by the mediator, including the mediator logic itself, is represented by an RDF graph.We i ...

Keywords: component design, interoperability, mediator, wrapper

13 <u>Flavor: a language for media representation</u>

Alexandros Eleftheriadis
November 1997 **Proceedings of the fifth ACM international conference on Multimedia**

Full text available: pdf(1.35 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

14 <u>PLI workshops: World-class product certification using Erlang</u>

Ulf Wiger, Gösta Ask, Kent Boortz
December 2002 **ACM SIGPLAN Notices**, Volume 37 Issue 12

Full text available: pdf(195.51 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

It is now ten years ago since the decision was made to apply the functional programming language Erlang to real production projects at Ericsson. In late 1995, development on the Open Telecom Platform (OTP) started, and in mid 1996 the AXD 301 project became the first user of OTP. The AXD 301 Multi-service Switch was released in October 1998, and later became "the heart of ENGINE", Ericsson's leading Voice over Packet solution.In those early days of Erlang programming, high-level tools for develo ...

Keywords: Erlang, testing

15 <u>World-class product certification using Erlang</u>

Ulf Wiger, Gösta Ask, Kent Boortz
October 2002 **Proceedings of the 2002 ACM SIGPLAN workshop on Erlang**

Full text available: pdf(162.26 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

It is now ten years ago since the decision was made to apply the functional programming language Erlang to real production projects at Ericsson. In late 1995, development on the Open Telecom Platform (OTP) started, and in mid 1996 the AXD 301 project became the

first user of OTP. The AXD 301 Multi-service Switch was released in October 1998, and later became "the heart of ENGINE", Ericsson's leading Voice over Packet solution.In those early days of Erlang programming, high-level tools for develo ...

Keywords: erlang, testing

16 GARLIC: generic Ada reusable library for interpartition communication

Yvon Kermarrec, Laurent Pautet, Samuel Tardieu
November 1995 **Proceedings of the conference on TRI-Ada '95: Ada's role in global markets: solutions for a changing complex world**
Full text available: pdf(964.47 KB)　　Additional Information: full citation, references, citings

17 SNMP through WWW

Ching-Wun 'Bo' Tsai, Ruay-Shiung 'Bo' Chang
March 1998 **International Journal of Network Management**, Volume 8 Issue 2

Full text available: pdf(376.25 KB)　　Additional Information: full citation, abstract, references, citings, index terms

In this article we propose a bilingual agent to accept either SNMP or HTTP commands and design several HTML pages to facilitate the task of network management. For network elements that support only SNMP, the bilingual agent can act as a proxy, so that the traditional SNMP agent can also be queried through the Web browser. © 1998 John Wiley & Sons, Ltd.

18 XMP++: an object-oriented solution for hiding the complexity of network management protocols

Sakari Rahkila, Susanne Stenberg
August 1994 **Proceedings of the thirteenth annual ACM symposium on Principles of distributed computing**
Full text available: pdf(123.13 KB)　　Additional Information: full citation, index terms

19 Domain specific embedded compilers

Daan Leijen, Erik Meijer
December 1999 **ACM SIGPLAN Notices , Proceedings of the 2nd conference on Domain-specific languages**, Volume 35 Issue 1

Full text available: pdf(884.68 KB)　　Additional Information: full citation, abstract, references, citings, index terms

Domain-specific embedded languages (DSELs) expressed in higher-order, typed (HOT) languages provide a composable framework for domain-specific abstractions. Such a framework is of greater utility than a collection of stand-alone domain-specific languages. Usually, embedded domain specific languages are build on top of a set of domain specific primitive functions that are ultimately implemented using some form of foreign function call. We sketch a general design pattern/or embedding ...

20 Metrics based asset assessment

Andreas Schmietendorf, Reiner Dumke, Erik Foltin
July 2000 **ACM SIGSOFT Software Engineering Notes**, Volume 25 Issue 4

Full text available: pdf(594.46 KB)　　Additional Information: full citation, abstract, index terms

The re-use of software components during the software development is considered to be an important factor to improve the quality and productivity and thus to reduce the time to market of the final product. In this paper we will present a proposal for a description model for re-usable components. We will also present the results of case studies concerned with both telecom specific and ,,generic" IT-components. These components have been

examined using the description model and a further set of (e ...

Keywords: component-based development, software reuse

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1 **An analysis of the OSI systems management architecture from an ODP perspective**
Genilloud, G.;
Systems Management, 1996., Proceedings of IEEE Second International Workshop on , 19-21 June 1996
Pages:72 - 81

[Abstract]   [PDF Full-Text (780 KB)]   **IEEE CNF**

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2 **Compact and efficient presentation conversion code**
Hoschka, P.;
Networking, IEEE/ACM Transactions on , Volume: 6 , Issue: 4 , Aug. 1998
Pages:389 - 396

[Abstract]   [PDF Full-Text (120 KB)]   **IEEE JNL**

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3 **A novel approach for mapping the OSI-SM/TMN model to ODP/OMG CORBA**
Pavlou, G.;
Integrated Network Management, 1999. Distributed Management for the Networked Millennium. Proceedings of the Sixth IFIP/IEEE International Symposium on , 24-28 May 1999
Pages:67 - 82

[Abstract]   [PDF Full-Text (804 KB)]   **IEEE CNF**

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  L34          2 FOCUS L33 1-
  L35          0 S 309/CLAS
  L36       9934 S 395/CLAS
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  L38         87 S L32 AND L36
  L39     163085 S WRAPP? OR ENCAPSULAT?
  L40         39 S L39 AND L38
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DISCLOSURE TEXT:

The Common Object Request Broker Architecture (CORBA) (1) specifies the architecture by which instances in a heterogeneous environment can communicate requests (that is, invoke methods) with each other regardless of whether they are local or remote. Recently, the increasing popularity of the CORBA pushed many people to write mappings between the "CMIP" and "SNMP" (2,3) protocols and CORBA based on the assumption that CORBA will become the network management standard of the future and that everybody will use it instead of CMIP and SNMP. Disclosed is a technique which allows management of CMIP and SNMP network resources through CORBA. Relevant characteristics of this technique are: full support of the CMIP and SNMP protocols, no limitations on the complexity of the ASN.1 (4) attribute syntaxes, light, extensible, string-syntax based. The goal of this work is to allow management of CMIP and SNMP resources through CORBA easily. To avoid the burden of mapping ASN.1 datatype to CORBA every ASN.1 datatype is represented using a CORBA string according to the mapping defined in document (5) without mapping it to a CORBA datatype closer to the original ASN.1 type. This mapping allows ASN.1 datatype to be fully supported and reduces significantly the complexity of the whole system since each ASN.1 datatype is represented with a string; hence, there is no need to define new CORBA types when new ASN.1 types have to be supported and to modify the application in order to support new types of management applications which deal only with strings that are natively supported by programming languages. CORBA object interfaces, defined using the Interface Definition Language (IDL), represent generic CMIP and SNMP objects. The interface DSOMInformation, derived from SOMObject, contains the information relative to the request and to the response(s). DSOMSNMPObj and DSOMCMIPObj interfaces, derived from DSOMInformation, implement some high level manipulation functions for manipulating the input/output information. These interfaces have been provided to further simplify the access to DSOMInformation and have to be considered like pure facilities. Internally, DSOMInformation stores the attributes in a hashtable which allows attributes to be retrieved and managed rapidly. Since hashtable is a generic class and attributes are represented using generic strings, it is possible to store inside the class DSOMInformation every attribute type regardless of their number or syntax.

A generic application or Java* applet which us es the CORBA interfaces transparently manages CMIP/SNMP instances through a Proxy application. This application is responsible in case of CMIP to issue CMIP requests the OSI stack, in the case of SNMP to communicate directly with the SNMP agent. ASN.1 syntaxes are mapped to/from string in the OSI stack in the case of CMIP or inside the Proxy in the case of SNMP. Since there are about ten SNMP syntaxes, the SNMP mapping is quite simple and done statically.

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(1) Object Management Group: The Common Object Request Broker: Architecture and Specification, Revision 2.0, (July 1995).

(2) ISO/IEC, CCITT, Information Technology - OSI, Common Management Information Protocol (CMIP) - Part 1: Specification ISO/IEC 9596-1, CCITT Recommendation X.711, (1991). (3) J. Case, M. Fedor, M. Schoffstall and C. Davin, "The Simple Network Management Protocol (SNMP)", RFC 1157, (May 1990). (4) ISO/IEC, CCITT, Specification of Abstract Syntax Notation One (ASN.1), ISO/IEC 8824, CCITT Recommendation X.208, (1988). (5) IBM Corporation, Agent User's Guide for the IBM NetView TMN Portable Agent Facility, Release 2, Version 1, IBM TMN Products GC31-8209-00, (October 1995). * Trademark of Sun Microsystems, Inc.

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